PROCEEDINGS OF THE CLUB

Meeting of April 15, 1931

The meeting was called to order by President Sinnott at 3:30 P.M. at the New York Botanical Garden with twenty-four members present. Minutes of the meetings of March 18 and April 7 were read and approved.

Correspondence between Dr. Jamestown of the University of Tennessee and Mr. R. H. Torrey was presented and discussed, proposing the establishment of a southern branch of the Torrey Botanical Club at Knoxville, Tennessee. Dr. Sinnott appointed a committee of three to consider this matter.

Dr. M. Demerec of the Carnegie Institution of Washington at Cold Spring Harbor, N. Y. gave an interesting talk on "Variegation Studies with *Delphinium Ajacis*," an abstract of which follows:

By using for illustration chlorophyll variegation of *Delphinium* and unstable characters of *Drosophila virilis*, evidence was presented which indicates that unstability of genes is responsible for the type of behavior observed in these characters. In the case of rose flowers with purple variegations in *Delphinium* it is assumed that the gene determining rose color is unstable and changes frequently into the gene determining purple color. Every purple spot on rose flowers, therefore, was caused by an independent reversion of the rose gene which occurred during the development of the flower. It is evident that reversions occurring late in the development of the flower will produce small purple spots and those occurring early in the development will produce large purple spots. The size of the spots, therefore, can be used as an indication of the time when the mutation occurred; and by assuming that on the average each cell generation doubles the size of a spot, it is possible to determine the frequency of mutability of the gene during several cell generations. Data were presented which indicate that the rose gene reverted with an equal rate during twelve generations of the development of the flower. This observation served as a basis for the conclusion that unstability of this gene was not caused by the gene being composed of smaller independent units (genomeres) but that it was probably a result of chemical unstability of the gene.

Attention was called to the fact that variegations follow cell lineage and could therefore be used to advantage in studying the development of organs on which they are visible.

The meeting adjourned at 5 P.M.

Respectfully submitted,
FORMAN T. MCLEAN, *Secretary*

Meeting of May 5, 1931

The meeting was called to order by President Sinnott at 8:30 P.M. at the American Museum of Natural History with fifty-nine members present.

Mr. Carl E. Bliss, 55 Randolph Place, South Orange, N. J., was unanimously elected to membership in the Club.

A vote of thanks was given to Dr. S. Fosdick Jones for his contribution of twenty-five dollars to the Lucien Marcus Underwood Fund.

Dr. Clyde Fisher gave a most interesting talk on his recent trip to Iceland and to Arctic Lapland, illustrated by a fine collection of colored lantern slides showing both the people, the country and the plant life. The interest was considerably increased by the presence of three young ladies dressed in Lappish costumes and fully equipped with the average Laplander's utensils.

The meeting adjourned at 9:45, after which refreshments were served by the entertainment committee in the Hall of Birds.

Respectfully submitted,
FORMAN T. MCLEAN, *Secretary*

Meeting of May 20, 1931

The meeting was called to order by President Sinnott at 3:30 P.M. at The New York Botanical Garden with thirty members present. Minutes of the meetings of April 15 and May 5 were read by Dr. Dodge who acted as Secretary in Dr. McLean's absence.

Prof. J. J. Copeland, City College, New York, N. Y. and Mr. Samuel Hirschberg, 359 Lenox Road, Brooklyn, N. Y. were unanimously elected to membership in the club.

The request of the Permanent Secretary of the American Association for the Advancement of Science that the Torrey Botanical Club express the preference as to the places of meeting of the Association for the years from 1931 to 1940 was read and the President was empowered to act with the Executive Committee in selecting places favored by the club.

For the committee appointed to consider the establishment of local chapters, Professer Harper reported the following resolution:

Resolved: That the Torrey Botanical Club welcomes the suggestion that local chapters be established in various parts of the United States outside the limits of the New York local flora region. The club authorizes President Sinnott to open negotiations with Professor Jennison on the following general basis. (1) Chapters are to bear the name of the locality where organized. (2) Membership is to consist of at least three regular members of the parent society. (3) Other members of the chapter are to receive TORREYA on the payment of $1.00 per year to the parent society. (4) The chapter may have one representative on the editorial board, to be nominated by the chapter. It is understood that the pages of TORREYA are open to the members of the chapter with such limitations as to space as now exist. (5) These relations may be terminated after one year's notice by either organization.

Dr. B. O. Dodge addressed the club on "A Further Study of the Morphology and Life History of Rose Black Spot Fungus," as follows.

It is a common experience of rose growers to find that certain varieties are more subject to black spot than others. Even the most susceptible varieties can be kept free from this disease if a fine grade of dusting sulphur is applied lightly about once a week beginning as soon as the leaves come out in the spring. There is on the market a sulphur preparation called "pomogreen" which has been dyed the color of the average rose leaf. This preparation contains 10 percent arsenate of lead. The same grade of dusting-sulphur dyed green can be obtained without the arsenate of lead. If either of these preparations is applied lightly when the rose leaves are dry, no unsightly residue will show and both black spot and mildew will be kept well under control.

The plants in one half of each of several beds of roses were dusted during the growing season, while the plants in the other half were left without protection. Both mildew and black spot were prevalent on the untreated plants during the summer, and they showed a great deal of defoliation during September and October. The protected plants bloomed freely until November and showed no defoliation from disease. Furthermore, the after-effects of dusting with sulphur were clearly reflected in the amounts of growth made by the plants during the following spring and summer, when the treated plants showed at least a third more growth. The apparent resistance of the variety Red Radiance in the field was proved not to be maintained when the plants were grown in the greenhouse, for it is found that the leaves of this variety could be very readily infected artificially.

Wolf has worked on the life history of the black spot fungus, *Diplocarpon rosae*, and has stated that there are two kinds of mycelium. The first kind is more or less superficial, lying just beneath the cuticle, and from this mycelium subcuticular acervuli develop. The second kind is more deep-seated and lies within the mesophyll tissues. Connecting the two sorts are hyphal strands which pass down not only between the epidermal cells and between the palisade cells but also directly through them, so that we have intracellular as well as intercellular hyphae.

Cytological studies made by the speaker seem to prove that there are not truly intracellular hyphae to be found, at least during the time when the leaves are in the living condition. Instead the epidermal cells especially in the region of the black spot show from one to a half dozen very chracteristic haustoria. Palisade cells beneath the acervuli quite generally also show long haustoria extending down within the cells.

Leaves showing black spot were overwintered out doors in wire cages. The spots were examined several times during the spring months but no ascocarps were found. In nearly all cases, however, numerous spermogonium-like bodies developed on the old black spots. These structures contained very small bodies which ordinarily would be called spermatia or microconidia. They were borne on two-celled stalks. Furthermore, subepidermal fruit bodies, which in their origin and method of development correspond very well with what Wolf described as ascocarps, were found on the black spots during the month of April. These bodies are really subepidermal acervuli which produce two-celled conidia having the same shape and measurements as the ascospores which Wolf found in similar structures. Inoculations were made with spores from these deep-seated fruit bodies and typical black spot with subcuticular mycelia and subcuticular acervuli followed within a few days. No explanation was offered to account for the failure for these subepidermal structures formed on overwintered leaves to develop asci and ascospores.

In absence of Dr. Arthur Hollick, who was scheduled to speak, Miss Marjorie Swift, Assistant Pathologist of the New York Botanical Garden, gave a talk on "Penicillium and Aspergillus in Odd Situations." This talk is published in full in the July, 1931 number of the Journal of The New York Botanical Garden. The meeting adjourned at 5:00 P.M.

Respectfully submitted,
FORMAN T. MCLEAN, *Secretary*